

R0044
SG2 0044

LUND

CRITERIA FOR CONCESSIONAIRE CAMPGROUND DEVELOPMENT
AND OPERATION ON KAIBAB NATIONAL FOREST

by

R. Dennis Lund
Recreation and Lands Staff Officer

Kaibab National Forest

February 11, 1980

TABLE OF CONTENTS

	Page
I. INTRODUCTION	1-3
II. LITERATURE REVIEW	3-6
III. STATEMENT OF METHODS	6-7
IV. RESULTS AND FINDINGS	7
V. SOCIAL PERSPECTIVES	8-12
VI. LOCATION, ACCOMMODATIONS/SERVICES	13-40
ECONOMIC CRITERIA	
A. REGIONAL LOCATION	13-16
B. ACTIVITIES AND PHYSICAL FEATURES	16
C. ENVIRONMENTAL FEATURES AND SITE CHARACTERISTICS	16-17
D. REQUIRED SERVICES AND FEATURES	17-18
E. CAMPSITE DENSITY AND USER SATISFACTION	19-22
F. OPTIMUM NUMBER OF UNITS AND CAMPER EQUIPMENT PREFERENCES	22-26
G. OCCUPANCY RATES	26-28
H. CAPITAL INVESTMENT REQUIREMENTS	28-31
I. OPERATION AND PROFITABILITY OF EXISTING CAMPGROUNDS	31-32
J. BREAK EVEN ANALYSIS	32-40
VII. SUMMARY	41-45
MANAGEMENT IMPLICATIONS	46

I. INTRODUCTION:

Home of the world-record trophy mule deer...the Kaibab Squirrel...Sycamore Wilderness...Kanab Creek...small lakes...open meadows...stands of aspen and ponderosa pine...and wild tributaries of the Grand Canyon itself. These are among the facets of the Kaibab National Forest which straddle the Grand Canyon and whose boundaries contain 1.5 million acres spanning 131 miles through northern Arizona. These are the features which attract well over 1,000,000 recreation visitor days of use annually to the Kaibab National Forest.

Developed recreation users on the Kaibab come from two distinct and separate sources. One source is visitors to the Grand Canyon, who because of Park Service use limitations, find they cannot stay within the Park on an overnight basis. These displaced individuals find the Kaibab National Forest to be a willing host if they plan on extending their stay at the Grand Canyon. They utilize, for the most part, small Forest campgrounds which are 20 to 40 years old and were designed to handle neither the numbers of people or equipment now in use. Use associated with the Grand Canyon on the Kaibab is approximately 125,000 recreation visitor days annually, or half of total developed use on the Kaibab.

The other half of developed recreation use centers around destination oriented campgrounds at four small, but attractive lakes. Normally, these lakes, 50 to 80 surface acres, would not cause much attention. However, given their geographical and physical location in relation to Phoenix, Arizona, their importance and potential become self-evident. All of the lakes are within 125 to 175 miles of Phoenix, where summer temperatures are typically 105° to 115°, and are in the ponderosa pine vegetative type where temperatures might reach 85° on a hot day. The million and a quarter residents in the Salt River Valley, faced with

high energy and transportation costs, are becoming increasingly more aware of the camping potential on the Kaibab National Forest. Manifestations of this potential became evident during the gas shortage summers of 1973 and 1979 when camping use on the Kaibab showed a substantial increase over previous years. At the same time, nearby National Parks showed a marked decline in visitation.

Use at developed campgrounds on the Kaibab is expected to continue to increase, regardless of the cost of transportation, because of its strategic location to Phoenix, its natural features and climatic relief and its proximity to the Grand Canyon. Existing camping facilities are in need of expansion and renovation if the present and projected demands are to be met.

Forest Service direction as stated in "Forest Service Roles and Outdoor Recreation" is to share equally with the private sector responsibility for providing destination campsites on National Forest lands, and to rely entirely on private sector capital to provide camping areas on National Forest lands for visitors visiting attractions off National Forest lands.

The intent of this paper then is to analyze the alternative of using private sector dollars to finance needed recreational developments on the Kaibab National Forest. However, before this alternative can be actively pursued, some quantitative and qualitative criteria need to be established so that the trade-offs between the two alternatives of private and public sector development can be adequately compared and evaluated.

The criteria for private sector campground development should be to define a favorable atmosphere and set of circumstances to reasonably assure successful operation and an adequate return on the required capital investment to the owner and, at the same time, to provide the desired recreational opportunity for the users. The existence of marginal concessionaire operations on National Forests are numerous and do not meet the needs of the Forest Service, concessionaire, or public. It is incumbent upon the Forest Service to see that these marginal and unprofitable requests for capital investments are not placed before the private sector for consideration because social and economic criteria were not analyzed or understood.

II. LITERATURE REVIEW:

The following research documents were used extensively during the preparation of this paper.

1. Bevins, M.I., LaPage, W.F., Wilcox, D.P., 1979.

The Campground Industry-Recent National Trends-Forest Service
Technical Report NE-53.

2. Brokaw, M.J., Cole, G.L., August 1977.

An Economic Analysis of Camper Equipment Preferences, Facilities
and Fees in Relation to Income. Univ. of Delaware Bulletin
#422

3. Brown, P.J., B.L. Driver and C. McConnell, 1978. The Opportunity Spectrum Concept and Behavioral Information in Outdoor Recreation Resource Supply Inventories: Background and Application.
4. Driver, B.L., and Brown, Perry J., 1975. A Social-Psychological Definition of Recreation Demand with Implications for Recreation Resource Planning.
5. Driver, B.L. and Brown, Perry J., 1978. The Opportunity Spectrum Concept and Behavioral Information in Outdoor Recreation Resource Supply Inventories and Rationale.
6. Gunn, Clare A., 1974. Public-Private Recreation Relationships.
7. Heberlein, Thomas A.
Density, Crowding & Satisfaction. Sociological Studies for Determining Carrying Capacity. USDA Tech Report-NC-28.
8. Hendee, and John C. & Campbell, F., 1969. Social Aspects of Outdoor Recreation - The Developed Campground.
9. Hendee, John, Clark R., Campbell, R., 1971. Values, Behavior and Conflict in Modern Camping Culture.
10. Hudson, J.F., Mullen, L.J., September 1977.
Costs and Returns from Privately Owned Rural Campgrounds in Louisiana. Louisiana State University. D.A.E. Research Report No. 525.

11. The Nattelson Co., Analysis of Commercial Services.
Roosevelt Lake-Tonto National Forest, 1979.
12. LaPage, W.F., et. al., May 1974.
Analysis of the Campground Market in the Northeast.
Report II-Privately Owned Areas. University of Vermont
Bulletin #679.
13. LaPage, W.F., 1968. The Role of Customer Satisfaction in
Managing Commercial Campgrounds. U.S.F.S. Research Paper NE-105.
14. LaPage, W.F., 1967. Sucessful Private Campgrounds. U.S.F.S.
Research Paper NE-58.
15. Lucas, Robert C., User Evaluation of Campgrounds on Two Michigan
National Forests. RWU-1903 #3.
16. Mitchell, Craig. Nov., 1977. A Different View of Tomorrow's
Campgrounds. Woodall's Trailers & RV Travel.
17. Sherling, A.B., McCoy, E.W., May 1972. Costs and Returns of
Overnight Campgrounds in Alabama. Auburn Univ. Circ. #198.
18. Reiling, S., Stoevener, H., March 1977. Commercial Campgrounds on
Oregon Coast: Characteristics and Financial Status. Oregon
State Univ. Circ. #659.

19. Schink, Donald., Sept. 1979. Recreational Vehicle Parks.
Wisconsin Univ.

20. Outdoor Recreation Space Standards. 1967. U.S. Government,
Department of Interior.

21. Woodall's Campground Management, January 1980.

22. Woodall's Campground Management, May 1978.

23. Woodall's Campground Management, July 1979.

III. STATEMENT OF METHODS:

The primary technique used in the preparation of this paper was to review and evaluate available literature pertaining to private sector campground operations. The major objective was to define the presence of any identifiable patterns of operation which could be utilized in defining the prerequisites for a successful private sector campground.

This paper was prepared with the intention of letting the available facts lead the reviewer to a logical and supportable conclusion as to what factors should be considered in evaluating the chances for a successful concessionaire campground investment and operation on National Forest lands.

An effort was made in the cited research to eliminate privately owned campgrounds that had the following characteristics:

- (1) Enterprises that were within the city limits of a municipality.
- (2) Enterprises whose primary objective was not to provide outdoor recreation, such as mobile home parks that had camping sites available.
- (3) Enterprises that would be better classified as resorts rather than campgrounds; establishments that had motels, cabins, restaurants and mobile home rental combinations.
- (4) Enterprises that were part of a commercial chain operation and, therefore, not characteristically rural owner oriented.

IV. RESULTS AND FINDINGS:

The stated purpose of this project is to isolate those factors, both social and economic, which are needed to contribute to a successful concessionaire financed and operated campground on National Forest lands.

Available evidence and documentation breaks the operation and the prerequisites for a successful management of a private sector campground operation into the two major categories of (1) Sociological Perspectives and (2) Essential Economic Needs.

V. SOCIOLOGICAL PERSPECTIVES

Traditional Forest Service Campgrounds have been designed with the assumption that the occupants were there to "get away from it all." Typically, these campgrounds had site densities of two to six sites per acre. Facilities and management were minimal, serving only to regulate the exchange between man and the environment while preserving the area in its natural state for generations to come.

Hendee and Campbell contend this man-environment assumption may be over restrictive. It is their conclusion that for the majority (not all) of campground visitors the experience can be better defined as social rather than environmental. Furthermore, they argue it is often the social aspects and characteristics of the modern developed campground which attracts many recreationists, and the environmental aspect is only endured because of the other advantages.

Driver's research (1978) adds credibility to Hendee and Campbell's conclusions. Driver has developed the proposition that recreational engagements are becoming of increasing social importance because of their value as a way of coping with environmental stress. Both population density and sheer expense of urban areas are important precipitators of stress-related phenomena. The very size of our human sentiments increases commutation time, places more intensive demands on environmental resources, increases the number of social contacts and concentrates pollutants. Certainly, recreation opportunities and the use of leisure

time provide important means of temporary escape and recovery for man under stress. Recreational opportunities provide choices for disengagement, locomotion, variety, changes, diversion, isolation and withdrawal - all related concepts that appear frequently in the stress literature within the context of temporary escape.

The stress-mediating value of outdoor recreation is further documented by responses of users to the question, "Why are you visiting this area?". Depending upon how the question is worded and how the answers are recorded, 50-70 percent of the users generally mention responses like "peace and tranquility," "get away from the city" or "from it all", and "change of routine."

(Preceding from B. Driver article appearing in "Environment and the Social Sciences").

Traditionally, Forest Service Recreation Management goals, simply stated, have been:

1. Protect users from harm,
2. Prevent damage to natural resources, and
3. Provide recreational opportunities that are demanded and appropriate for the area being managed.

Item Number 3 talks on a different aspect in light of Driver's work and acceptance of his definition of recreation as being, "Not an activity,

but a particular type of human experience that finds its source in intrinsically rewarding voluntary engagements (mental and physical) during nonobligated time. (Driver and Brown, 1975.)

Driver and Brown (1975) take the preceding concepts and definitions one step further by defining user preferences within a "Recreation Demand Hierarchy." This hierarchy separates recreation demand into four associated components which are defined in terms of special types of opportunities that are demanded. The four levels are:

Level 1. Demand for recreation activity. Such as camping with family, fishing, hiking in wilderness, etc.

Level 2 Demands for opportunities to experience those situational attributes of physical, social and management settings that characterize quality of a preferred recreation environment. These three types of "setting preferences" define the specific Level 1 opportunity. For example, a camper may desire a campground near a lake where fishing and swimming is available.

Level 3 Demands for opportunities to realize specific psychological outcomes that are desired from an activity opportunity and its associated preferred environmental setting. Examples might be: enjoying out of doors, strengthening family ties, temporarily escaping a variety of adverse stimuli at home or work, etc.

Level 4 Demands for opportunities to realize the benefits that flow from the satisfying experiences. This would include enhanced family solidarity resulting from a family camping trip or health benefits from a long hike.

The result of the recreation hierarchy is the concept of the recreation opportunity spectrum which incorporates both the idea of activity and experience opportunity. It attempts to define those experience opportunities which are most appropriate for the area. It does not encourage as many activities as possible in a given area.

Driver has developed the following spectrum which defines, among other things, the characteristics of the environmental setting that are appropriate for different activities.

Modern	Urban	Concentrated	Rustic	Semi-primitive Motorized	Semi-primitive Non-motorized	Primitive
--------	-------	--------------	--------	-----------------------------	---------------------------------	-----------

Recreation Opportunity and Resource Classification Spectrum. (Driver, 1978)

Using this spectrum, and the associated definitions, a developed camping area would fall in the rustic to concentrated portion of the ROS.

Driver defines the concentrated classification in relationship to Levels 1, 2, and 3 of "Recreation Demand Hierarchy" as follows:

Experience Opportunity - to experience activities with other groups. The conveniences of the site are as important as the physical setting. Physical challenges are unimportant.

Physical/Social/Managerial Setting - Characterized by substantially modified natural environment. Renewable resource modification and utilization practices are primarily to enhance specific recreation activities and to maintain vegetative soil and cover. Site and sounds of man are readily evident and concentration of users is often high.

A considerable number of facilities designed for use by a large number of people are provided for special activities. Moderate to high densities of facilities are provided in developed sites.

Use should be approximately 7,300 recreation visitor days per acre per year or 20 visitors per acre per day. Assuming there are 3.5 to 5 people per group, this would indicate a desired campsite density of 5 sites/developed acre.

To adequately meet the demands of a successful private sector operation, it would appear management parameters and experience levels should be within the scope of the concentrated classification level of ROS.

Acceptance of the idea that developed camping should be considered as a social rather than an entirely environmental activity provides a manager with some broad guidelines of how to best meet the public's expectations of a developed camping area. It does so by defining the attributes of the facilities or resources that give the camping experience a recreational value. From a managerial perspective, those attributes can be planned for or managed more readily than can the less tangible demands for experience. (Driver and Brown).

VI. LOCATION, ACCOMMODATION/SERVICES AND ECONOMICS CRITERIA

Ultimately the success of a private sector campground is reflected in the ledger. Studies by Bevins & LaPage, et. al., (1974) of 408 private campgrounds resulted in classifying only 160 as successful or 60 percent as being unsuccessful. A successful campground was defined as one which attracted a sufficient volume of business to realize a higher than average gross income per site for its size group. An understanding of the sociological criteria and factors already discussed can play a large part in the success or failure of a campground. However, the cold, hard economics involved in the construction and operation of a campground are of major concern and importance to potential investors.

Research documentation and conversations with operators of private campgrounds seem to substantiate the existence of three broad categories which have an influence on the eventual success or failure of a privately owned campground.

Among the major areas identified were location, accommodations and services, and the realities of the economics of operating a private campground.

A. Regional Location

One component that cuts across both successful private and public development is location and the attractions that go with a given location. Obviously, some areas have greater potential for tourism or camping than others. Potential can be regarded as two broad types:

1. Areas with greatest assets for touring or "travel through", such as National Parks or other national attractions.
2. Areas with potential for destination oriented users. (Gunn, 1976).

Where the two types converge is the greatest potential for private enterprise to provide commercial support services--food, camping, and entertainment-exists.

The importance of location for a successful private sector campground is discussed in numerous studies. Two major points seem to surface from these studies:

- (a) Distance from major population.

The closer an area is to its likely market, the more desirable it is and the more likely it will have a high demand (McIntosh, 1972).

Brokaw and Cole (1977) have determined that the average distance a destination oriented camper is willing to travel is at least 150 miles with a 200 mile limit not being unreasonable. They also point out willingness to travel has apparently not been influenced by the cost of fuel. Gas prices are not

the limiting factor in planning destination camping trips. Availability of fuel is the limiting factor. This conclusion was verified locally in 1979 and 1973 by increased number of campers at our local camping areas.

(b) Location relative to competition.

Location is important to a campground owner for two basic reasons. First, a good location attracts clientele. Secondly, a location where competition is keen (both private and public) can be damaging to all parties concerned because of an oversupply of available sites. This is particularly true when both sectors are in the immediate area providing the same services.

Private campground owners feel that the public sector is competing unfairly by furnishing developed camping areas, charging minimal fees, and at the same time including facilities such as power, water and sewage. There is a pressing need to improve coordination among the public and private camping supplier if the diverse needs of the camping public are to be met. (Bevins, LaPage and Wilcox, 1979)

B. Activities and Physical Features Associated with Successful Campgrounds.

Successful commercial campgrounds contain a variety of services, facilities and activities for their customers. An increase in the number of activities engaged in at the campground is accompanied by a slight increase of camper satisfaction as long as they are appropriate to the setting. (LaPage, 1968, 1974). Campground owners feel that features associated with a campground are very important in satisfying customers and in attracting their repeat business. Most often mentioned on-site activities and features were:

1. Fishing
2. Boating or canoeing
3. Swimming
4. Trails - Hiking, horse and motor bike
5. National or Regional Attractions
6. Amusements (Playgrounds or Game Rooms)

C. Desirable Environmental Features and Site Characteristics.

Among physical resources, water seems to be an almost universal necessary ingredient for a high quality experience and a successful private camping venture. The most often mentioned attractive physical features of successful campgrounds are:

- a. Located near water.
- b. Located in a wooded area.
- c. Accessible to metropolitan centers - 150 to 200 miles.

(Hudson and Mowan, 1977. Bevins, LaPage, et. al., 1974)

D. Required Services and Facilities.

Studies by LaPage (1968 and 1979), Brokaw and Cole (1977), Reiling and Stoevener (1977), and Woodall's Campground Management July 1979, all conclude the following service facilities were highly desirable and associated with the more successful operations:

- 1. Availability of full hook-up facilities (water, electricity and sewer).
- 2. Flush toilets.
- 3. Hot Showers.

Other often mentioned facilities were:

- 4. Camp Store. (If not near a town.)
- 5. Laundry facilities.

6. Cabins.

7. Sewage Dump Stations.

8. Boat rental facilities.

9. Children's playground.

It is interesting to note that in study areas where comparative numbers of private and public campgrounds existed, the commercial campgrounds enjoyed a competitive edge - 36 percent favored private areas, 20 percent favored public ownership and 38 percent liked both types equally well. Preferences for private over public campgrounds were:

- a. better facilities.
- b. reserved campsites.
- c. fewer regulations.
- d. privacy
- e. individual attention provided by management.

It should also be reported that an equal number of studies exist which show a preference for public campgrounds because of their large size and environmental surroundings.

E. Campsite Density and User Satisfaction

User satisfaction is composed of a series of consideration, which the user relates to how well his expectations were or were not met. Users of public campgrounds apparently have a preference for them because of their larger size camp unit. LaPage (1974) in his studies concludes that site density had no apparent effect on the success or failure of a campground in the 4.5 to 7.2 sites/acre range. In spite of this, it does seem reasonable to assume that at some point an increased campsite density will result in a drop of camper satisfaction to the point where camper visits are shortened or they stay away altogether.

Heberling (1979) points out that basing the apparent success of a recreational facility on user satisfaction is a poor management parameter. He contends that satisfaction alone has no relationship to the management or experience parameters as described in Driver's ROS. A high degree of satisfaction at campgrounds should be expected because of self-selection and the displacement of those whose expectations were not met, because of whatever reason. Herberling argues that "perceived crowding and perceived use levels" is a much better management parameter. People are more apt to feel crowded in a recreational setting if they see or have contact with more people than they had expected. Therefore, management should and can set the experience or satisfaction level by letting facility designs or "carrying capacity" limit the "perceived crowding" based on management values and objections.

Driver's "concentrated" classification can be used as a broad base for establishing management parameters for a concessionaire-operated campground. His optimum use capacity of 7200 recreation days/acre/year can be reduced to approximately 5 sites/developed acre. Traditionally, Forest Service campgrounds have campsite densities of two to six sites/acre and normally are designed to provide a degree of privacy in a desirable natural environment. This formula has met with a high degree of success over the years. (Numerous authors)

Research projects of successful private sector campgrounds conclude site densities of 4.3 to 12 units per acre are not uncommon and are considered to be more than adequate to meet management and users objectives and satisfactions. (Sherling and McCoy, 1972., Reiling and Stoevener, 1977., and Natelson Company, 1979.) Evidence does seem to substantiate a preference for campgrounds in the 4.5 to 9.3 sites per acre by users and owners (Bevins, LaPage, et. al., 1974).

An insight to user satisfaction and displacement may be provided in Clark, Hendeel and Campbell's study (1971) which concludes that the majority of visitors (65%) to campgrounds traditionally viewed as crowded, felt they were getting satisfaction from the "solitude and tranquility" present. The "sounds of other campers talking and singing, people bringing city conveniences to the campgrounds, people camping next to you" invoked nowhere near the repulsion that managers anticipated-only 12 percent of the respondents were bothered a great deal by the aforementioned items. Apparently those who were bothered had already left.

Finally, the same authors argue "managers and users march to different drums in their behavioral expectations". Traditional outdoor recreation values of natural environment appreciation appear to permeate both managers' and users' perspective towards camping, although different means of satisfying their goals through appropriately sanctioned behavior are clearly present. Managers see isolation and primitive interaction with the environment as necessary; users apparently find the highly developed, structured setting of the modern campground and its associated social environment as appropriate.

Hendee suggests that since modern campgrounds attract social rather than environmental oriented campers, the more primitive sites away from the beaten track might better be reserved for environmentally oriented use, and the more readily accessible areas designed to accommodate social use.

The preponderance of evidence seems to support concessionaire campground site density preferences of 4.3 to 9.3 units per acre. Driver's "concentrated" classification indicates an optimum density of 5 units/developed acre. It, therefore, appears that densities of 4-6 sites per acre would be reasonable management parameters for destination oriented campgrounds. Campground densities supporting off-site attractions such as the Grand Canyon could conceivably be in 6-12 units/acre category.

The four types of carrying capacity as identified by Heberling should also be given consideration in determining optimum campsite densities in order to arrive at management parameters for desired use levels. The four identified carrying capacities were:

1. Physical
2. Ecological
3. Facilities
4. Social

F. Optimum Number of Campsite Units and Camper Equipment Preferences.

1. Number of Units.

A consideration for prospective campground developers is the cost of development and what the minimum level of development should be. Numerous studies have shown what appears to be a direct relationship between the amount of capital invested in each site and the eventual success of the enterprise. Not surprisingly, campers at the areas having larger capital investments stayed longer and came back more. (LaPage, 1967 and 1979).

Detailed studies pertaining to optimum size of campgrounds based upon returns to capital investments are not numerous.

To complicate matters further, the studies that were done seem to come up with different answers as to an optimum campground size. The listing of documented studies and their findings are summarized as follows:

MINIMUM SIZE STUDY FINDINGS

NUMBER OF UNITS

<u>Author</u>	10-49	50-99	100-124	125-174	174 +
LaPage 1974		X	X		
Hudson & Munson 1977				X	
Reiling and Stoevener 1977			X		
Natelson Company 1979					X
Woodall's Campground Mngt. (Jan. 1980)				X	
Campground Magazine (Mitchell, 1977)					X
Woodall's Campground Mngt.-Industry Wide Average (May 1978)				X	X

X = Indicates results of preferred size study.

The optimum campground size is geared to many factors: capital investments, environmental/sociological considerations, occupancy rates, and length of operating season. Consequently, it is not possible to categorically state the optimum number of units for a concessionaire campground.

The preceding studies do seem to offer some value in defining a lower limit of 50 to 124 units for a successful minimum size private sector campground. Peak use periods may exceed this range, but operating seasons limit the revenue producing potential of a given campground because a large part of the existing capacity is not used during the winter months.

2. Camper Equipment Preferences.

Determining the proper mix of tents, travel trailers and truck campers to accommodate is an important economic consideration as it has a direct effect on the required capital investment. Until the most recent energy crisis, there was a well-defined trend towards the use of self-contained vehicles. However, with the increase in the price of fuel, a definite trend back to tents is unmistakable. As of now, a 50/50 ratio exists and could very well swing more towards the tent user. All of this would be of benefit to the private developer as per unit cost for tent sites (\$900 to \$1700 per site) are considerably less

than for full hook-ups (\$2600 per site). (Bevins and LaPage, 1979). "Tenters" also tend to have longer visits than their more mobile counterparts. The camping industry recognizes a need to accommodate tents because of their increasing numbers and because they buy more of the profit-making items at a campground.

One of the few points unanimously agreed to by the cited researchers was the need for the separation of campers who do not use electricity from those who own more sophisticated equipment requiring electricity. Thus, people who enjoy primitive camping (tents) would not be forced to listen to radios, stereos, etc., while they are staying at the campground.

G. Occupancy Rates

Still another factor that determines the economic success of a campground is the occupancy rate. Successful campgrounds obviously have higher occupancy rates than the unsuccessful - empty spaces do not generate income.

Research data on occupancy rates as they apply to successful campgrounds is scarce. However, three documents were located which discussed occupancy rates and what reasonable expectations for prospective investors should be. Those findings are summarized as follows:

1. Bevins, LaPage, et. al., (1974) conclude that successful campgrounds achieve 75% occupancy during the prime summer season.
2. Bevins, LaPage and Wilcox (1979) determined 1978 average occupancy rates for the west during the period of Memorial Day through Labor Day 1978 to be as follows:

<u>Average Weekday Occupancy</u>	<u>Average Weekend Occupancy</u>	<u>Total Occupancy</u>
67%	71%	68%

3. Woodall's Campground Management, January 1980. This publication listed the west as having the highest campground occupancy rate in 1978 and the lowest in 1979 - primarily because of a scarcity of gas. Occupancy rates started to rise once gas became available. At any rate, seasonal occupancy rates of 65% to 80% appeared justified for the far west.

The preponderance of data seems to indicate that a minimum 70 percent occupancy rate should be achieved if the campground is to have any chance of financial success.

4. Anticipated Seasonal Site Rentals

Assumptions:

184 day operating season is reasonable for an 80 unit campground.

a. Operating Season of May 1 - Oct. 31 = 184 days

b. Seasonal Site Rentals

Total yearly rentals = number of sites available X
length of season X expected occupancy rate.

80 sites X 184 days X 70% occupancy = 10,304 site
rentals per season.

H. Capital Investment Requirements and Operation & Maintenance Costs

The following costs are based on the conclusions and the assumptions developed up to this point and supposedly cover the minimum capital investment needs of a concessionaire campground.

I. Capital Investment Needs

Construction and development costs were obtained from four sources:

- a. Dr. Donald Schink, University of Wisconsin 1979.
- b. Bevins, LaPage and Wilcox (1979).
- c. National Park Service Estimating Center (1979).
- d. Recent Contract Costs on the Kaibab National Forest.

On-site features and facilities needed and planned for include:

- a. 80 unit campground with 5 sites per developed acre.
 - 40 sites with full hook-ups - water, power and sewer.
 - 40 sites with no hook-ups, but water available.

- b. 10 flush toilets.
- c. Hot showers and laundry building.
- d. Camp store and office.
- e. Manager's residence.
- f. Small boat dock and boats.

It is also assumed good access to the site exists and electric power is available.

COST ITEMIZATION

<u>Type of Investment</u>	<u>Amount</u>
a. 1 mile of interior road and parking spurs - gravel surface	\$ 40,000
b. 40 sites w/water, elect. & sewer @ \$2600/site	\$ 104,000
c. 40 sites w/water available @ \$900/site	\$ 36,000
d. 10 flush toilets @ \$4,000 each	\$ 40,000
e. Hot showers and laundry building	\$ 30,000
f. Store - 600 sq. ft. @ \$30/sq. ft.	\$ 18,000
g. Office - 150 sq. ft. @ \$30/Sq. ft.	\$ 4,500
h. Sewage Lagoon	\$ 35,000

i.	Boat dock @ \$40/sq. ft.	\$ 4,000
j.	Six boats @ \$500 each	\$ 3,000
k.	Eighty picnic tables @ \$50 each	\$ 4,000
l.	Eighty garbage cans	\$ 640
m.	Eighty campsite signs	\$ 640
n.	Manager's residence (Trailer)	\$ 20,000
o.	Survey and design of site	\$ 25,000
p.	Contingency costs @ 10%	<u>\$ 35,000</u>

Total Required Initial Cash Outlay \$ 401,258
 Rounded to = \$ 400,000
 or \$5,000.00 per site.

\$5,000 per site is considerably higher than estimated by Bevins, et. al., in 1977. However, after deducting residence, store, boat docks, etc., the per unit cost is about \$4,300 per site which is fairly close to the 1979 S.C.S. and Park Service estimates cited by LaPage in 1979.

2. Annual Operation and Maintenance Costs.

Operation and maintenance costs are based on information contained in published data and from the authors own experience.

<u>Cost Item</u>	<u>Amount</u>
a. Labor = 126 man weeks or 2.4 man years (LaPage 1974)	\$ 26,000
b. Land use fees	\$ 1,500
c. Maintenance and supplies (2% of investment)	\$ 8,000
d. Advertising	\$ 1,000
e. Utilities	\$ 3,000
f. Insurance	\$ 1,000
g. Sales tax	\$ 1,000
h. Store supplies	\$ 3,000
i. Property tax	<u>\$ 2,000</u>
Total Average Annual O&M Costs	\$ 46,500

I. Operation and Profitability of Existing Campgrounds

The authors of the three major documents dealing with the economics of a private campground were of near unanimous opinion on the following points concerning the operation and profitability of private sector campgrounds:

- a. Anyone entering the campground industry today would be required to make a substantial investment if positive returns to management are to be expected.
- b. Return to capital and labor are often 5 percent or less.
- c. Less successful campgrounds tend to establish prices "on keeping in line with other campgrounds", rather than what was

needed to show a profit and make a reasonable living wage. The presence of public campgrounds was often a contributing factor.

- d. Nearly all campgrounds are operated as a family affair and are not necessarily the major source of family income. (Reiling and Stoevener, 1979. Hudson and Mowan, 1977. LaPage, 1974.)

J. Break Even Analysis

A traditional economic analysis was done to determine the required minimum gross annual income which would provide a reasonable wage and a return on the initial capital investment. The following assumptions were made:

- 1. Required capital investment costs and operation and maintenance costs arrived at in the preceding section are assumed to be reasonable.
- 2. Indicated occupancy rates and length of operating season are reasonable and with intensive management and advertising are attainable.
- 3. To be successful, annual operating costs (including a percentage return on capital) must be equal to or less than the annual income. Required adequate annual income was determined by calculating the payments which could have been received if an alternative investment, equal to the initial construction

cost, had been made at interest rates of 5, 10 and 15 percent. To this amount was added the average annual operating cost of the campground. The sum of these two would then equal the minimum required annual receipts to achieve the owner's income objectives.

Alternative investment rates for the initial cash outlay of 5 percent, 10 percent and 15 percent exist. The present values of the alternative investment incomes were calculated using the following formula:

$$PV = PMT \left[\frac{1 - (1 + i)^{-n}}{i} \right] (1 + i)$$

Where

n = Number of time periods.

i = Periodic interest rate expressed as a decimal.

PMT = Periodic payment (or initial cash outlay).

PV = Present value of alternative investment income.

To simplify the mathematics an HP-22 calculator was used.

a. \$400,00 initial one-time investment at 5, 10 and 15 percent expected return.

i. 5 percent return on alternative

\$400,000 investment = \$ 32,097

Average annual operation &
maintenance costs = \$ 46,500

For 5 percent return on \$400,000 investment

Total annual income must equal = \$ 78,597

ii. 10 percent return on alternative investment

of \$400,000 = \$ 46,984

Average annual operation
& maintenance costs = \$ 46,500

For 10 percent return on \$400,000 investment

Total annual income must equal = \$ 93,485

iii. 15 percent return on alternative

\$400,000 investment = \$ 63,905

Average annual operation
and maintenance costs = \$ 46,500

For 15 percent return on \$400,000 investment

Total annual income must equal = \$ 110,405

b. Gross revenue per site required to meet annual costs.

It was implied earlier that many private sector campgrounds are at best marginal financial operations.

One reason for this is the tendency for owners to establish prices based on the competition's rates rather than establishing the rates required to realize a reasonable return on invested capital in addition to earning a reasonable wage.

Therefore, the calculation of required gross site fees was based on a minimum annual income objective using the following formula:

$$\text{Required Daily Income Per Site (By Alt. Investment Return)} = \frac{\text{Alternative Investment Income} + \text{O&M Costs}}{\text{Occupied Sites Per Season}}$$

5 percent return on capital -

$$\frac{\$32,097 + \$46,500}{10,304 \text{ Occupied Sites}} = \$7.63/\text{site/day} \text{ for 20 years}$$

10 percent on capital -

$$\frac{\$46,984 + \$46,500}{10,304 \text{ Occupied Sites}} = \$9.12/\text{site/day} \text{ for 20 years}$$

15 percent on capital -

$$\frac{\$63,905 + \$46,500}{10,304 \text{ Occupied Sites}} = \$10.71/\text{site/day} \text{ for 20 years}$$

- c. \$100,000 initial one time investment with \$300,000 mortgage at 10 percent.

The preceding calculations were based on a one time long term investment cost of \$400,000. The chances of an investor having this much ready cash is remote. More likely, a 25 percent cash investment would be made with the remaining balance financed by a lending institution at 10 percent for 20 years. This being the case, the initial \$400,000 cash outlay would be reduced to \$100,000, but the average annual operation and maintenance would be increased by the \$35,238 mortgage payment to cover the \$300,000 loan. Annual alternative investment returns for \$100,000 at 5, 10 and 15 percent for 20 years would be:

<u>Present Return on Capital</u>	<u>Annual Alternative Returns</u>
5%	= \$ 8,024
10%	= \$ 11,746
15%	= \$ 15,976

However, because of the added \$35,238 mortgage payment, the average annual operation and maintenance costs would be:

\$ 46,500	=	O&M costs
<u>\$ 35,238</u>	=	Mortgage payment
\$ 81,738	=	Annual average O&M costs

Total annual operating costs for the respective desired rates of return would be:

i. 5 percent return on alternative

investment of \$100,000	=	\$ 8,024
Average annual O&M	=	<u>\$ 81,738</u>

Required annual income for

5 percent return on capital	=	\$ 89,762
-----------------------------	---	-----------

ii. 10 percent return on alternative

investment of \$100,000	=	\$ 11,746
Average annual O&M	=	<u>\$ 81,738</u>

Required annual income

for 10 percent return

on capital	=	\$ 93,484
------------	---	-----------

iii. 15 percent return on alternative

investment	=	\$ 15,976
Average annual O&M	=	<u>\$ 81,738</u>

Required annual income for

15 percent return on capital	=	\$ 97,714
------------------------------	---	-----------

d. Gross revenue per site to meet annual costs:

<u>Expected % Return On Capital Investment</u>	<u>Required Avg. Daily Income Per Site For 20 Yrs.</u>
5%	\$ 8.71
10%	\$ 9.07
15%	\$ 9.48

e. Owner/Operator Income

The vast majority of campgrounds are family owned and operated. This being the case, the projected family income would be the \$26,000 shown in the operation costs plus the return on the initial capital invested. Total projected income for each alternative investment rate would be as follows:

	Projected Income	Desired Return on Capital	
Capital Investment	5%	10%	15%
\$400,000 Cash Investment	\$46,000	\$66,000	\$86,000
\$100,000 Investment	\$31,000	\$36,000	\$41,000

A \$36,000/year income would yield an average salary of \$15,000 per year per person assuming 2.4 man years of labor is required to operate the business. This would not be considered an excessive salary and does indicate the need for a second income for the family operated income.

4. Break Even Analysis Summary:

The results of the preceding economic analysis seem to indicate that the required average daily per site income of a concessionaire campground would be competitive with existing rates in northern Arizona and at the same time offer a moderate return on the investors' capital. (See Appendix)

It is important to realize that most of the cost and projected income figures were based on the best available data. It would appear from industry-wide cost figures, the estimated construction costs may be somewhat high. If this is in fact correct, the required site fees could be reduced proportionately. However, high cost estimates were purposely used to reflect

the additional costs called for by Forest Service "Management Parameters" which would normally not be seen in private sector camping areas.

VII. SUMMARY

Private sector financing and operation of campgrounds on National Forest lands offer an opportunity to provide facilities and services to the public which are now lacking in many areas because of budgetary constraints.

Past performance of concessionaire operations on National Forest lands has often been, at best, marginal. Poor showings by the private sector can be attributed to a number of facts. The least of which is poor initial planning by both private and public managers. Inadequate capital to provide necessary facilities, competition from public sector, and failure to recognize minimal needs for a successful investment at the start of the planning process have compounded the concessionaire's problems.

It is the author's opinion that the following listed variables have considerable potential for influencing the success of a concessionaire operation on National Forest lands and should be considered by Forest Service management when evaluating the possibility of a concessionaire financed operation at a public recreation area.

It is important to realize that meeting the identified factors, particularly in parts II & III, do not necessarily mean private sector development is assured or desired. This decision can only be made after the trade-offs and management objectives are compared to public sector operation. It

does mean that the chances for a successful operation are reasonably good and should be considered as an alternative to public sector operation during the EAR process.

A. Forest Service Implications and Considerations for Private Sector Development

1. Managers must define physical/social/managerial parameters for a recreation area in the early planning stages.
2. Managers need to understand and apply the following methods of determining carrying capacity:
 - Physical
 - Ecological
 - Facilities
 - Social
3. Reduced construction standards are necessary if sufficient returns on investments are to be realized by concessionaires, e.g. gravel roads and parking areas instead of asphalt; rock traffic control barriers in place of concrete, higher campsite densities, etc.

4. Income generating items, normally not considered appropriate, such as seasonal renting of trailer sales, showers and laundry facilities should be accepted.
5. Competition between Forest Service and concessionaires should be eliminated by having comparable fee structures. Public and private sectors should coordinate services and facilities which will be offered in local areas.
6. Forest Service Management needs to recognize the necessity of providing off-site features such as trails and swimming areas to complement the attractiveness of the concession.
7. Forest Service should consider including complete survey and design work of proposed concessionaire campgrounds as part of a prospectus.
8. Subsidization of non-income producing items, such as expanded road systems, etc. may be required by the Forest Service.

B. Campground Requirements

1. Minimum size should be no smaller than 70 units with campsite density 4.5 to 9.3 units per acre units per acre would be considered optimum.

2. The following facilities and services should be considered acceptable:

- a. 50-50 mixture between full service hookups (power, water and sewer) and primitive sites.
- b. Flush toilets.
- c. Hot showers and laundry.
- d. Sewage disposal facilities.
- e. Camp store if located from town.
- f. Cabins.
- g. Children's playground.

3. Location Requirements:

- a. Free from excessive competition.
- b. Capable of operating at 70 percent occupancy level.
- c. Must be located near a lake or some outstanding feature.
- d. Usually not over 200 miles from a major population center.

e. Situated in wooded areas.

4. Available Activities

a. Fishing

b. Swimming

c. Boating or canoeing.

d. Trails for hiking, horseback riding and motor bikes.

e. Amusement - playground or game room.

f. National or Regional attractions.

C. Owner Characteristics

1. \$100,000 available for immediate investment with financing for an additional \$300,000.

2. A willingness to accept a likely return of 5 to 10 percent on capital investment.

3. Second income source.

4. Able to devote most of time to management of campground.

VIII. MANAGEMENT IMPLICATIONS

Concessionaire financing and operation of destination campgrounds and destination campgrounds for external attractions should be considered as an alternative to public financing in the EAR process.

Private sector financing and development is viable only when the bulk of the previously listed campground requirements can be accepted at a considered location. Public financing should be sought if these criteria can not be met because of established management parameters or criteria.

Based on the preceding analysis, it appears the following locations on the Kaibab National Forest could be initially considered in the EAR process as potential sites for private sector financing and operation:

A. Destination Campgrounds for External Attractions

1. Jacob Lake - North Side of Grand Canyon
2. Tusayan - South Side of Grand Canyon

B. Destination Campgrounds

1. White Horse Lake
2. Kaibab Lake
3. Cataract Lake

APPENDIX

APPENDIX MATERIAL

1. Exhibit A - Supply Roles of Recreation Entities.
2. Exhibit B - Priorities for Recreation Efforts by the Forest Service.
3. Exhibit C - 1978 Private Campground Inventory on South Side of the Grand Canyon.
4. Exhibit D - 1979 Occupancy Rates for Kaibab Lake Campground and White Horse Lake Campground.
5. Exhibit E - Sample Calculation of Optimum Capacity Range for Kaibab Lake.
6. Exhibit F - Sample Benefit/Cost Calculations.
7. Exhibit G - Overflow Demand from Grand Canyon.

EXHIBIT A

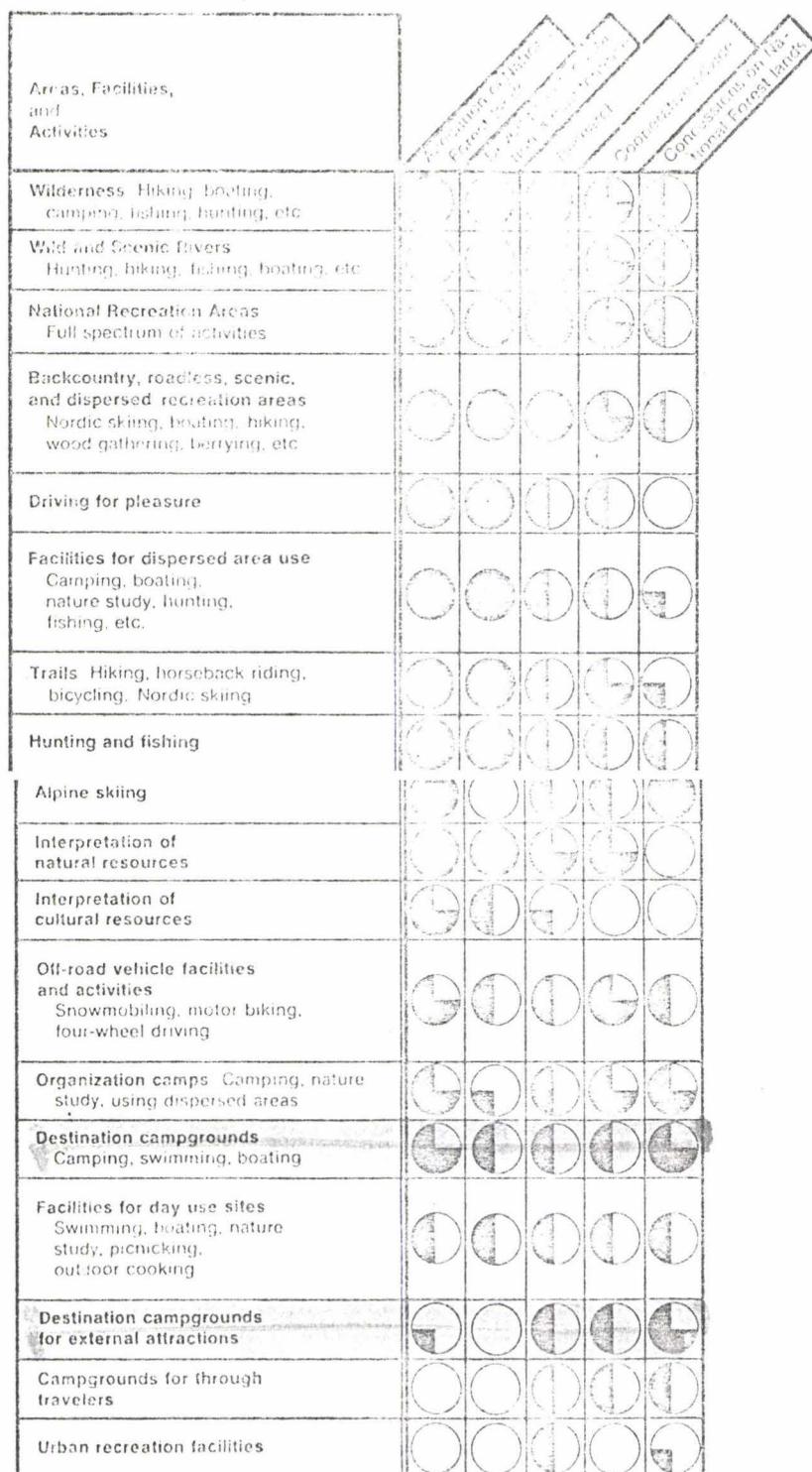
Supply Roles of Recreation Entities

Areas, Facilities, and Activities	Forest Service	U.S. Fish and Wildlife Service	Bureau of Land Management	State Government	Local Government	Private Individuals
Wilderness (skiing, boating, camping, fishing, hunting, etc.)	Very high	Very high	Very high	Very high	Very high	Very high
Wild and Scenic Rivers (Hunting, hiking, fishing, boating, etc.)	Very high	Very high	Very high	Very high	Very high	Very high
National Recreation Areas (Full spectrum of activities)	Very high	Very high	Very high	Very high	Very high	Very high
Backcountry, roadless, scenic, and dispersed recreation areas (Nordic skiing, boating, hiking, wood gathering, berrying, etc.)	Very high	Very high	Very high	Very high	Very high	Very high
Driving for pleasure	Very high	Very high	Very high	Very high	Very high	Very high
Facilities for dispersed area use (Camping, boating, nature study, hunting, fishing, etc.)	Very high	Very high	Very high	Very high	Very high	Very high
Trails (Hiking, horseback riding, bicycling, Nordic skiing)	Very high	Very high	Very high	Very high	Very high	Very high
Hunting and fishing	Very high	Very high	Very high	Very high	Very high	Very high
Alpine skiing	Very high	Very high	Very high	Very high	Very high	Very high
Interpretation of natural resources	Very high	Very high	Very high	Very high	Very high	Very high
Interpretation of cultural resources	Very high	Very high	Very high	Very high	Very high	Very high
Off-road vehicle facilities and activities (Snowmobiling, motor biking, four-wheel driving)	Very high	Very high	Very high	Very high	Very high	Very high
Organization camps (Camping, nature study, using dispersed areas)	Very high	Very high	Very high	Very high	Very high	Very high
Destination campgrounds (Camping, swimming, boating)	Very high	Very high	Very high	Very high	Very high	Very high
Facilities for day use sites (Swimming, boating, nature study, picnicking, outdoor cooking)	Very high	Very high	Very high	Very high	Very high	Very high
Destination campgrounds for external attractions	Very high	Very high	Very high	Very high	Very high	Very high
Campgrounds for through travelers	Very high	Very high	Very high	Very high	Very high	Very high
Urban recreation facilities	Very high	Very high	Very high	Very high	Very high	Very high

Key:



EXHIBIT B

Priorities for Recreation Effects
by the Forest Service

Key:



Very high



High



Medium



Low



Very low

PRIVATE CAMPGROUNDS:

KOA: 100 spaces - 23 with water & electricity
(3 mi. north
of KAIBAB LAKE) 10 with water only
34 with electricity only

COSTS - \$5.00 per night for two people
\$.50 per each additional person
\$.40 for water
\$.75 for electricity

Notes • The campground has been full
each night since memorial day.
• the campground usually fills
between 5:00 - 7:00 p.m.
• Business seems to be better
than last year, but other KOA's
are reporting the same elsewhere.

RED LAKE: 30 SPACES WITH ALL hookups (water, elect.,
(7 mi north of sewer)

KAIBAB LAKE) COSTS - \$7.50 per night for 2 people for
all hookups
\$ 1.00 for shower only
\$ 3.50 for space with no hookups

NOTES • Business is good but campground
is not filling up.
• Business is expected to increase next year

CIRCLE PINES
CAMPERLAND:
(east of Williams)

60 UNITS WITH ALL HOOKUPS
SEPERATE OPEN AREA FOR TENTERS

costs - \$3.00 per night for two people
\$4.00 with electricity

- NOTES
- Newly opened, business slow at present
 - some areas still under construction - showers, for example

KAIBAB TRAILER

PARK (WILLIAMS): # SPACES NOT KNOWN.
costs - \$5.50 per night for two people
\$.50 each additional person

- NOTES
- THERE were several empty spaces on the several occasions observed.
 - Was unable to talk to operator of campground

[TOTAL NUMBER OF PRIVATE CAMPGROUND SPACES
COUNTED IS 300+. THIS DOES NOT INCLUDE
A PRIVATE CAMPGROUND NOW CLOSED BETWEEN
REDLAKE & VALLE.]

VALLE CAMPGROUND: 52 SITES WITH HOOKUPS
(junction Hwy's 64 & 180)

COSTS - \$2.50 for two people
\$.25 extra for shower
\$.50 for hookups

NOTES • The campground is not filling up at all.

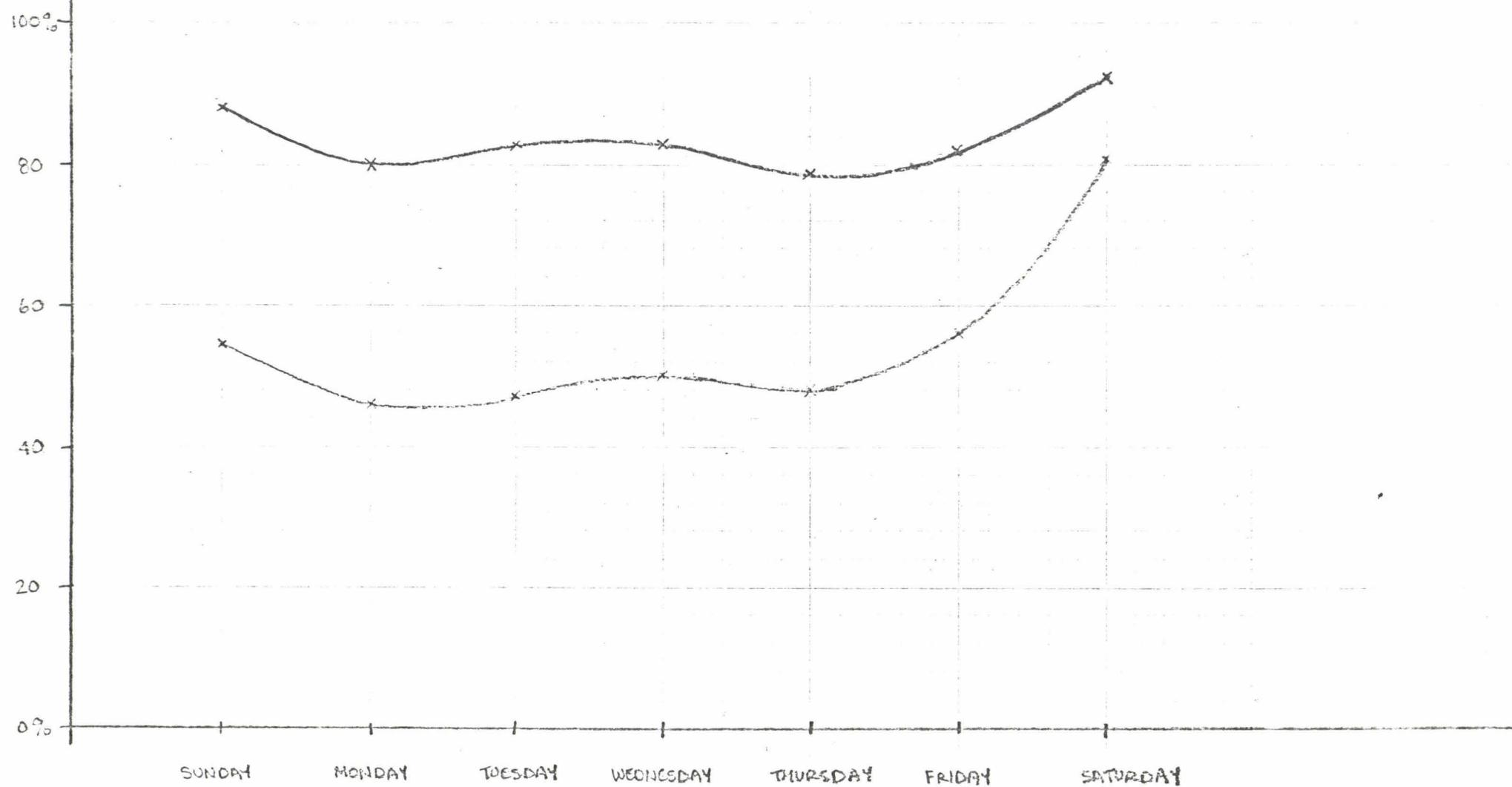
BEDROCK CITY: estimated 50 SITES, HOOKUPS
(junction Hwy's 64 & 180) AVAILABLE

COSTS - \$4.00 for two people
.50 for each additional person
\$1.00 for hookups

NOTES • Business is good, but the campground has not filled within the last two weeks.
• Business is about the same as last year.

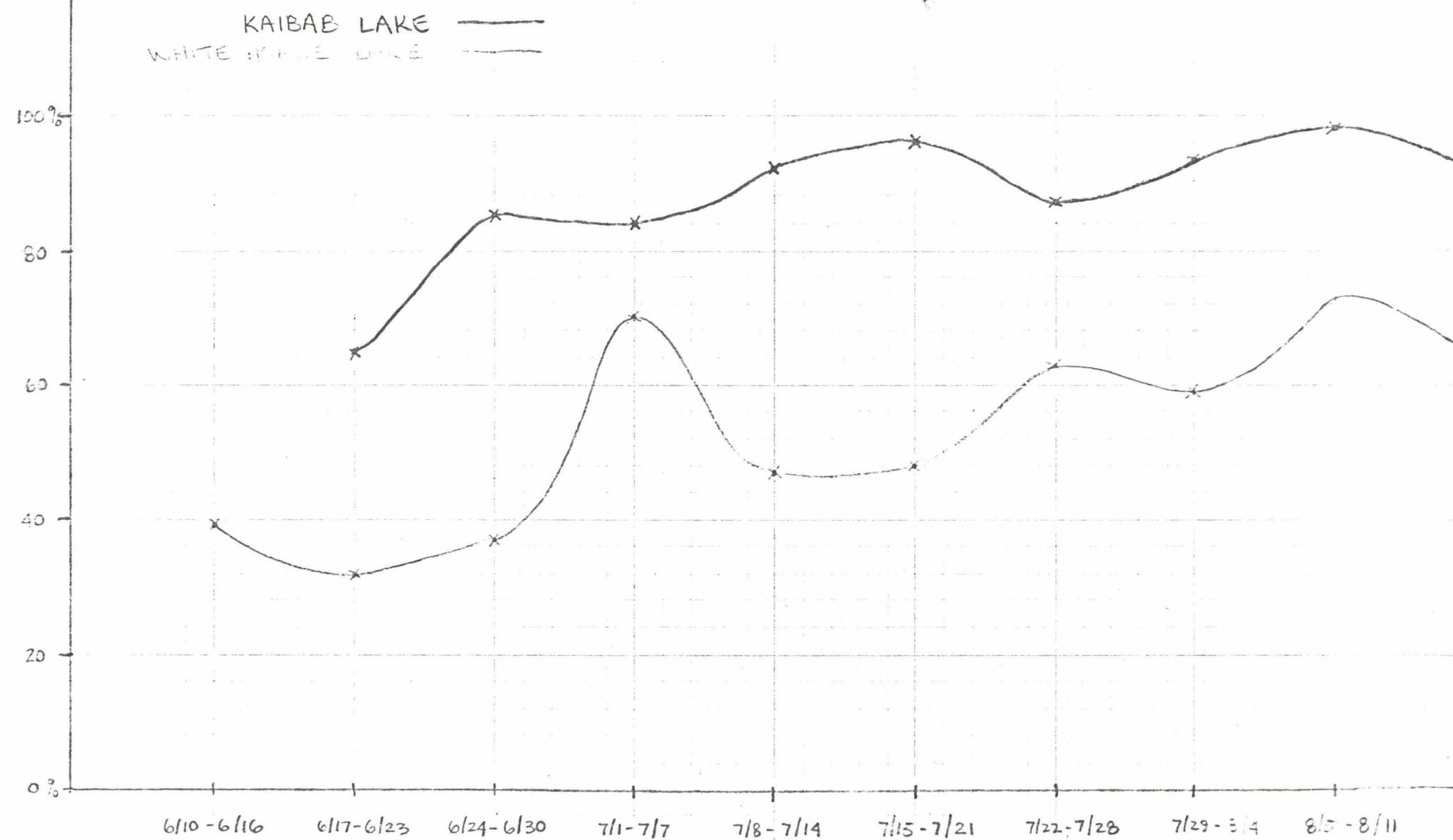
KAIBAB LAKE
WHITE HORSE LAKE

EXHIBIT D



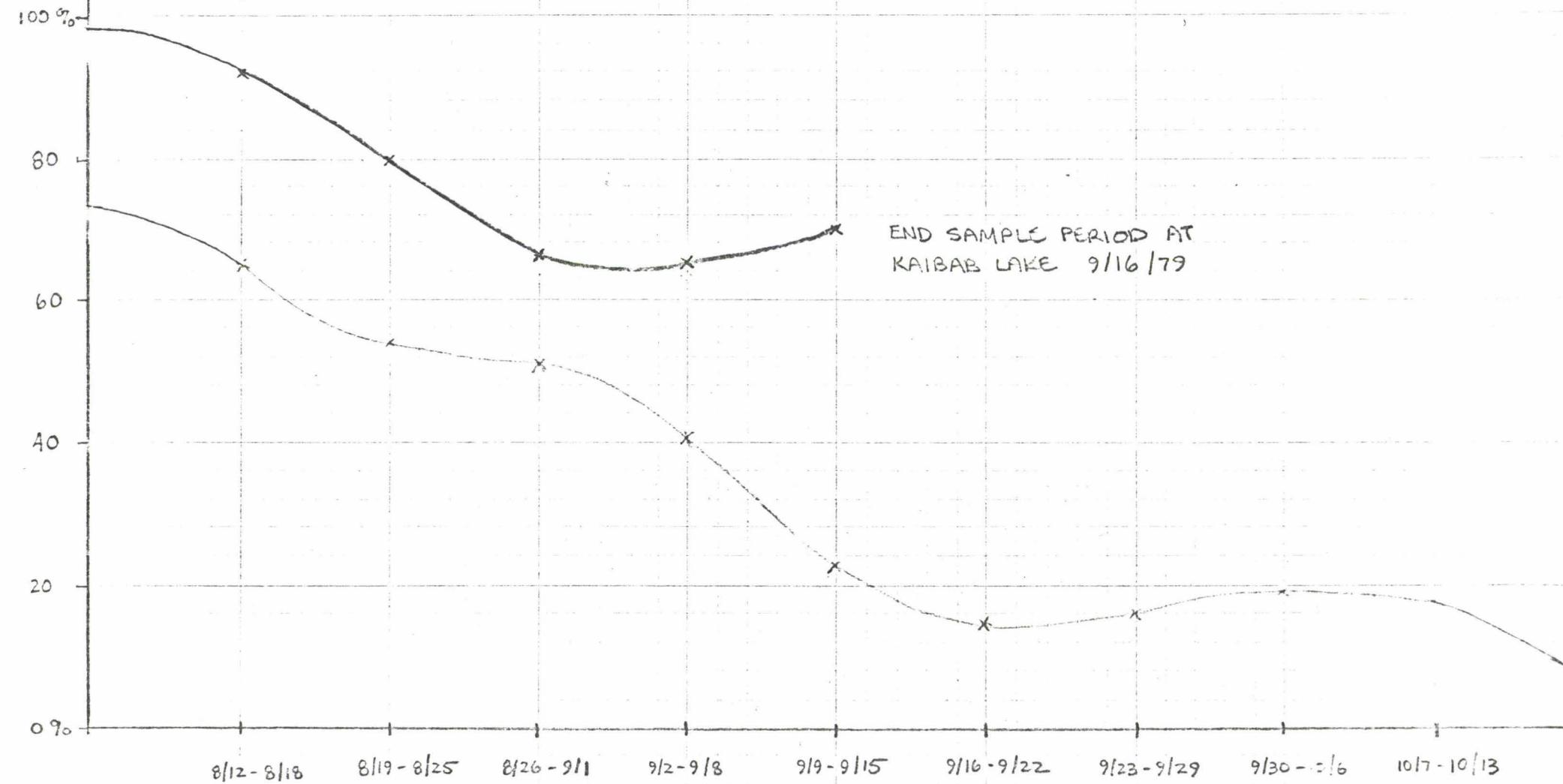
AVERAGE DAILY PERCENT OCCUPANCY OF WHITE HORSE LAKE & KAIBAB LAKE CAMPGROUNDS 6/24 - 9/6/77

EXHIBIT E



AVERAGE WEEKLY PERCENT OCCUPANCY OF WHITE HORSE LAKE + KAIBAB LAKE CAMPGROUNDS 6/10 - 8/11/77

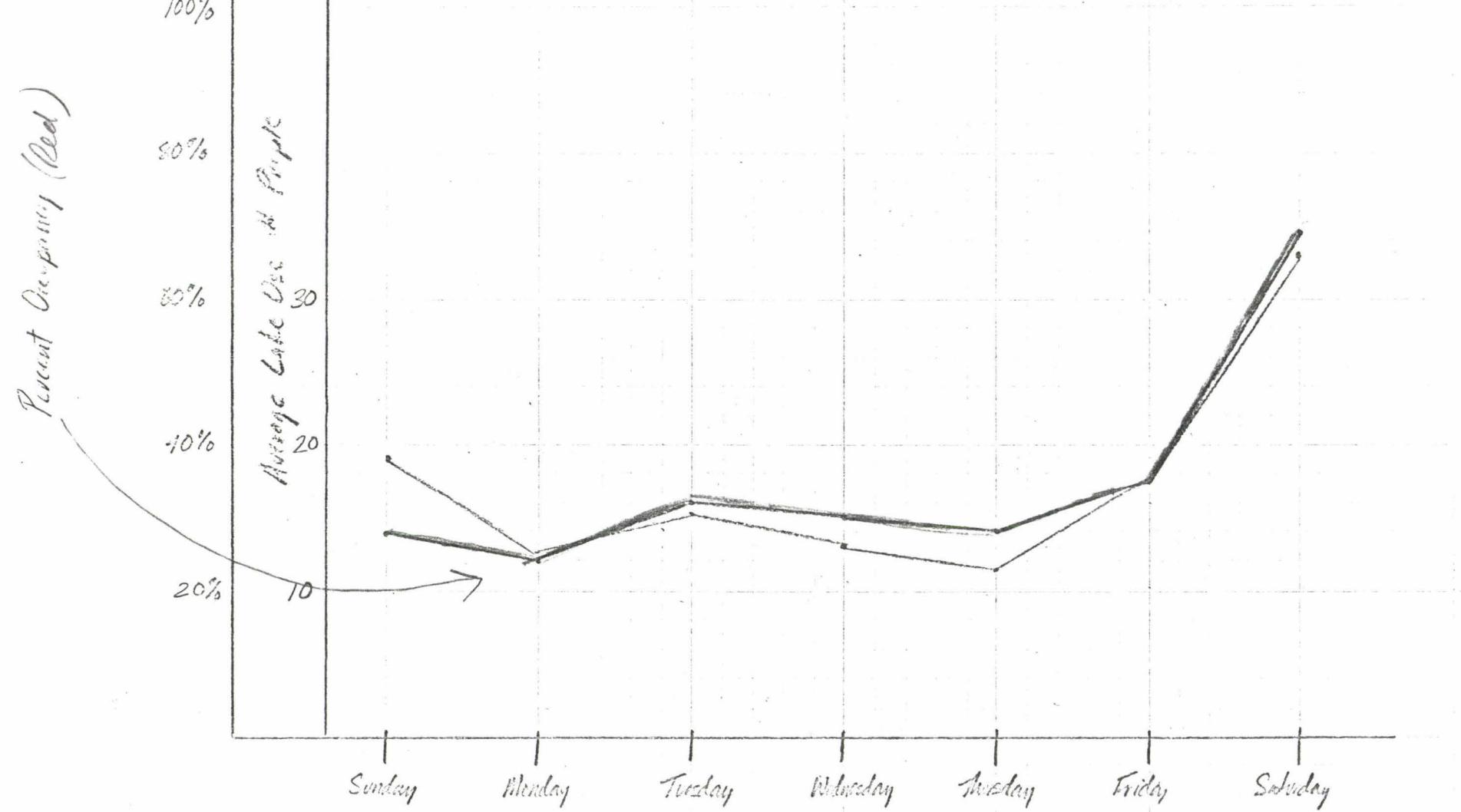
KAIBAB LAKE
WHITE HORSE LAKE



END SAMPLE PERIOD AT
KAIBAB LAKE 9/16/79

AVERAGE WEEKLY PERCENT OCCUPANCY OF WHITE HORSE LAKE & KAIBAB LAKE CAMPGROUNDS 8/12 - 10/13/79.

White Horse Lake Occupancy Rate June 8 - June 27, 1979



RECREATION USE RECORD

Site: Kaibab

District: Williams

Site Name: White Horse Lake

Total Number of Developed Units: 84

Predetermined Sample Period: 6/18/79

to 6/27/79

(1) Site Time	(2) Day of Week	(3) Number of Vacant Units	(4) Number of Occupied Units	(5) Occupancy Rate %	Site Use			Lake Use		Name of Observer
					(6) Auto	(7) Trailer	(8) Tent	(9) Shoreline	(10) Lake	
8-79 1800	Friday	52	32	38%	10	17	5	13	2	T. Ringuette
9-79 1800	Saturday	18	66	78%	23	21	22	25	6	T. Ringuette
10-79 1800	Sunday	51	33	39%	10	13	10	11	4	T. Ringuette
11-79 1800	Monday	63	21	25%	5	10	6	11	2	T. Ringuette
12-79 1800	Tuesday	53	31	37%	7	17	7	12	2	F. Wolfe
13-79 1800	Wednesday	51	33	39%	10	17	6	6	3	F. Wolfe
14-79 1800	Thursday	60	24	28%	3	12	9	8	1	T. Ringuette
15-79 1800	Friday	56	28	33%	11	12	5	7	3	T. Ringuette
16-79 1800	Saturday	26	58	69%	21	16	21	10	5	T. Ringuette
17-79 1800	Sunday	63	21	25%	8	7	6	9	4	T. Ringuette
18-79 1800	Monday	62	22	26%	6	8	8	3	1	T. Ringuette
19-79 1800	Tuesday	60	24	28%	9	6	9	10	4	F. Wolfe
20-79 1800	Wednesday	64	20	24%	7	6	7	5	3	F. Wolfe
21-79 1800	Thursday	63	21	25%	5	8	8	3	3	T. Ringuette
22-79 1800	Friday	56	28	33%	10	9	9	12	2	T. Ringuette
23-79 1800	Saturday	33	51	61%	18	12	21	13	6	T. Ringuette
24-79 1800	Sunday	64	20	24%	3	8	9	7	3	T. Ringuette
25-79 1800	Monday	66	18	21%	5	5	8	8	2	T. Ringuette
26-79 1800	Tuesday	59	25	30%	11	8	6	6	0	F. Wolfe
27-79 1800	Wednesday	61	23	27%	8	8	7	4	2	F. Wolfe
Total		1081 24.0	599 30.0	36% AVE	190 32%	220 37%	189 31%	183 76%	58 24%	Compiled by T6.

$$6000 \times 3.5 = 21,000$$

11%

Exhibit F

Addendum to Section B, Economic Feasibility Report for the Kaibab Lake Campground Expansion, dated 9/12/77.

Determination of lake and shoreline capacity (PAOT, people at one time) is derived in part from data contained in a guideline for Understanding and determining Optimum Recreation Carrying Capacity, dated January 1977.* Data reflects only the users recreation experience preference.

*Bureau of Outdoor Recreation Reference.

I

SUGGESTED OPTIMUM CAPACITY RANGE

BOATING AND BOAT FISHING - NON-POWER FLAT WATER.

	Low	Base	High
Acres of Water/Boat	2.5	2.0	.5
Distance between boats	330'	Selected Capacity	240'

FISHING, SHORELINE

	Low	Base	High
Fisherman/mile	41	50	147
Distance between fisherman	129'	Selected Capacity	30'

A mean water level of 10' below spillway level was used to determine surface acres and shoreline footage for optimum capacity. The lake level during the recreation use season will vary due to draw down, evaporation and variable seasonal inflow.

<u>Capacity</u>	<u>Surface Acres</u>	<u>Usable Lin. Ft. Shoreline</u>
Spillway level	75	7,600
10' below	30	4,000

1. Capacities were determined as follows:

a. Boating and Fishing
 $\frac{30 \text{ available acres}}{2 \text{ Boats/acre}} = 15 \text{ boats (30 PAOT)}$

b. Fishing Shoreline
 $\frac{4,000 \text{ Feet}}{50 \text{ ft./Fisherman}} = 80 \text{ Shoreline PAOT}$

LAND CARRYING CAPACITY

	Low	Base	High
Campsites/acre	3	7	19
Distances between sites	120'	79'	48'

LAND CAPACITY CALCULATIONS

200 acres available for camping X 3/ acre = 600 potential campsites per camp.

2. Selected capacities at the lower end of optimum capacity ranges were chosen over heavier densities for two primary reasons:

- 1.) They offer a quality recreation experience consistent with development level objections.
- 2.) The reduced number of people is less apt to have an adverse affect on the municipal water supply.

II PRIMARY FACTORS INFLUENCING SELECTION OF OPTIMUM CAPACITY LEVEL.

a. Size of Recreation Activity Area.

Kaibab Lake and proposed related recreation facilities will involve approximately 260 acres. Generally large activity areas are operated at a lower capacity level, because of the unfavorable accumulative effect that is associated with many recreation participants. The proposed development level will offer the visitor basic comforts of a developed site, with water and sanitation facilities. Resource protection includes paving of all travelways and use areas. Developed site will be located at least 1000' from the high water level. The proposed development separates the two major user groups and with the separation the desired recreation experience is enhanced for both groups.

b. Quality of Site Amenities.

Any water body in the Southwest will draw resident fisherman and traveler as well. There are two catagories of users at Kaibab Lake. More than half are just staying the night, while the rest are staying to enjoy the cool forest and water related activities. The proposed isolating of these two user groups will provide quality recreation experience for both.

c. Tolerance of Aquatic Life.

Catchable size trout is planted bi-monthly, by the Arizona Game and Fish Department. Greater spacing is preferred for shoreline and boat fishing for this species. The fish population should not be unduly pressured with this intensity of fisherman.

PAOT SUMMARY

It is apparent from the calculations in Part B. I that theoretical maximum capacities far exceed the planned capacities. Reasons for reduced PAOT's over theoretical maximums were previously cited. Therefore, the following capacities are being recommended.

Campground	146 sites - 5 people/site	730 PAOT
Boat fishing	15 boats - 2 people/boat	30 PAOT
Shoreline fishing	4,000+lin.ft. - 50'/fisherman	80 PAOT

EXHIBIT E

Alternative 8 - Forest Service Subsidized private Campground at Grandview;
Economic Feasibility For Private Sector

1. Construction Costs

25% of total

a. 200 sites @ 1,250	250,000
b. Design and engineering	6,000
c. Access road - 1 mile @	<u>62,500</u>

Total 318,500

2. Annual Costs

a. Salaries	26,000
b. Maintenance	4,000
c. Utilities (water, electricity, etc.)	20,000
d. Special use fee Granther-Thye permit fee is 6% of value of Forest Service owned improvements minus any maintenance costs on those improvements (6% x 937,500) - 1,250	<u>55,000</u>

Total 105,000

3. Annual Benefits

Camping fees 153 days x 200 sites x 80% occupancy x \$7.00 per site	171,360
---	---------

4. Annual Cash Flow

Annual benefits - annual costs 66,360

5. Discounting

20% interest over 20 years	
a. Annual costs (present value)	511,310
b. Annual benefits (present value)	834,450

6. Benefit/Cost Analysis

Benefits (P.V.)	834,450
Costs (initial cost and annual costs (P.V.))	<u>829,810</u>

Present Net Worth 4,640

EXHIBIT F

Alternative 6 - Private Sector Campground at Grandview
Private Sector Economic Evaluation

1. Construction Costs

a. 200 sites @ \$2,000/site	\$400,000
b. Access road 1 mile @ 250,000/mile	80,000
c. Sewage lagoon	35,000
	<u>Total</u>
	\$515,000

2. Annual Costs

a. Salaries	26,000
b. Maintenance	4,000
c. Utilities (power, water, etc.)	20,000
d. Special use fees	1,500
	<u>Total</u>
	\$ 51,500

3. Annual Benefits - Camping Fees

153 days x 200 sites x 80% occupancy x \$7.00/site	171,360
--	---------

4. Annual Cash Flow

Annual benefits - annual costs	119,860
--------------------------------	---------

5. Discounting

20% interest over 20 years	
a. Annual costs (present value)	250,780
b. Annual benefits (present value)	834,450

6. Benefit/Cost Analysis

Benefits (P.V.)	834,450
Costs (initial costs and annual costs (P.V.))	<u>765,780</u>

Present Net Worth	68,670
-------------------	--------

Benefit/Cost Ratio	$\frac{1,072,600}{1,007,360}$	1.09:1.00
--------------------	-------------------------------	-----------

EXHIBIT F

Benefit/Cost Ratio $\frac{834,450}{829,810}$ 1.01:1.00

EXHIBIT G



United States Department of the Interior

NATIONAL PARK SERVICE
GRAND CANYON NATIONAL PARK
GRAND CANYON, ARIZONA 86023

IN REPLY REFER TO:

L3415

MAR 7 1979

Andrew Lindquist
Kaibab National Forest Supervisor
800 South 6th
Williams, Arizona 86046

Dear Andy:

Following the meeting with you on February 1, we have developed some patterns and figures which may be of help to you.

During the summer months; Memorial Day to Labor Day weekends, Mather Campground fills to capacity every day by 10 a.m. The Desert View Campground fills to capacity shortly afterward, usually within 1 to 2 hours. Visitors entering the park from the east, and wishing to camp after both Desert View and Mather have filled proceed to the camping areas in Tusayan and Ten-X.

Visitors entering the park from the south usually ignore all posted signs which state that NPS Campgrounds fill by 10 a.m. During a normal day, 100-150 visitors seeking campsites at Mather Campground are turned away. An additional 200-300 are turned away daily at the South Entrance Station. Many of these people go to the private facility in Tusayan and to your Ten-X Campground.

A good deal of the overflow camping could be accommodated with a parking lot type facility. This is evidenced by the number of self-contained camper vehicles which attempt to park overnight in parking lots and overlooks within the park. We move them up until 11 p.m. when, for reasons of safety, efforts to move these people cease.

We appreciate your efforts in an area which concerns us all.

Sincerely yours,

Merle E. Stitt
for Superintendent

D 4

KAIBAB NF-TUSAYAN RD	
Rec'd MAR 15, 1979	
INITIALS	
ACTION	X
INFO	✓
RANGER	
R. & W.	
R. & L.	✓
TIMBER	
TIMBER ASST.	
F.C.O.	
F.C.O. ASST.	
CLERK	
FILE	X
LIBRARY	
OTHERS	developed some

2310

KAIBAB N. F.	
RECEIVED	MAR 8 1979
Supervisor	Admin. Ser.
Lec./ Educ.	Edu. & Fin.
Adm. Off.	Per. personnel
Timber	Res. resources
Ranger W/L	
Fire & W/S.	
Engr.	

3/13/79

2/9/83

Dick,

Here are my notes on "Concessionaire Campgrounds Operation Guidelines".

They are predicated on two

very basic assumptions —

1) Based on '82 Service Wins

RESULTS, OPERATION OF U.S.

CAMPGROUNDS CAN BE CON-

DUCTED BY A CONCESSIONAIRE

w/ NO LOWERING OF

HEALTH/SAFETY OR OPERATION

STANDARDS.

- 2) ACCURATE ~~all~~ DATA IS AVAILABLE FOR: (1) USE,
(2) OPERATING COSTS (gross)
(3) POST HISTORY OF ~~ADJUSTED~~
~~LINCH~~ COLLECTIONS ^{ADJUSTED} TO
CURRENT FEES FOR
THE SUBJECT CAMPGROUNDS.

GIVE ME A CALL IF YOU CAN NOT
TRANSLATE MY WRITING, OR IF YOU
CAN, DO NOT UNDERSTAND WHAT

H
MEANT.

D
EYNESS
WHD

CONCESSIONNAIRE CAMPGROUND OPERATION GUIDELINES

I. Forest / REGIONAL FINANCIAL ECONOMIC CONSIDERATIONS

A. CONSIDERATIONS FAVORING CONCESSION OPERATION

a. PRIMARY OBJECTIVE IS TO
MINIMIZE ANNUAL
DTM BUDGET (071)

b. PROVIDES ADDITIONAL FLEXIBILITY
FOR FTE + WFP LIMITATIONS

c. PROCEED TO PART II.

B. CONSIDERATIONS FAVORING FOREST MANAGEMENT OF CAMPGROUNDS

d. TOTAL INCOME (LWCF
RECEIPTS) EXCEEDS GROSS
OPERATING COSTS

II. Minimum Campground Requirements FOR CONCESSION OPERATION

A. QUALIFIES FOR LWCF COLLECTIONS

B. PHYSICAL CHARACTERISTICS

1. MINIMUM REQUIREMENTS

a. Size - SINGULARLY OR
IN COMBINATION -
70-100 SITES.

b. Use - NOT LESS THAN
35,000 - 40,000 RVD'S.
ANNUALLY.

c. Season of Use -
Memorial Day-Labor Day

d. Not in competition w/
OTHER PUBLIC SECTOR
CAMPGROUNDS

2. DESIRABLE REQUIREMENTS

a. DEF SITE ATTRACTIONS

b. Site occupancy of
90-100%.

c. Low Vandalism -
(FUNCTION OF ANNUAL
O&M costs)

C. Financial Considerations -

MUST PROVIDE AN ECONOMIC RETURN TO PERMITTEE

1. ANNUAL GROSS REVENUE/SITE
SHOULD BE AT A MINIMUM
\$ 350 - 400 / SITE

2. GROSS ANNUAL INCOME -
\$ 35,000 - \$ 40,000

III. Permittee Requirements

A. Minimum Requirements

1. COMPOUND EXPERIENCE -
EITHER PUBLIC OR
PRIVATE SECTOR.

2. FINANCIAL CAPABILITY -
CASH ON HAND AND
AVAILABLE TO SUSTAIN FIRST
MONTH OF OPERATION.

3. SECOND SOURCE OF
INCOME.

B. Desirable But Not Necessary

1. FAMILY OPERATION
2. LIVE IN GENERAL AREA